



New records of *Cynomops planirostris* (Peters, 1865) (Chiroptera, Molossidae) for the state of Amazonas and its updated distribution in Brazil

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Abstract: *Cynomops planirostris* is widely distributed in the Neotropical region, with records extending from Panama to northern Argentina. In Brazil, *C. planirostris* was recorded in 17 states, with few records in the Amazon basin. Herein we report new records of *C. planirostris* from the state of Amazonas.

Key words: Molossines, *Cynomops planirostris*, Brazilian Amazon, geographical distribution

The genus *Cynomops* Thomas, 1920 includes six species: *Cynomops abrasus* (Temminck, 1827); *C. greenhalli* Goodwin, 1958; *C. mexicanus* (Genoways & Jones, 1967); *C. milleri* (Osgood, 1914); *C. paranus* (Thomas, 1901); and *C. planirostris* (Peters, 1865) (Peters et al. 2002; Eger 2008).

Cynomops planirostris is widely distributed in the Neotropical Region, with records from Panama to the south-central portion of South America (Koopman 1994). *Cynomops planirostris* has been reported from French Guiana, Guyana, Suriname, Venezuela, Colombia, Peru, Bolivia, Brazil, Paraguay and northern Argentina (Koopman 1994; Eger 2008).

In Brazil, *C. planirostris* has been recorded in 17 states: Espírito Santo (Ruschi 1951), Mato Grosso (Pine et al. 1970), São Paulo (Vizotto and Taddei 1976), Pernambuco (Mares et al. 1981), Distrito Federal (Sá 1998), Mato Grosso do Sul (Pulchério-Leite et al. 1998), Minas Gerais (Pedro and Taddei 1998), Goiás (Rodrigues et al. 2002), Paraná (Miretzki 2003), Bahia (Faria et al. 2006), Ceará (Fabián 2008), Sergipe (Rocha et al. 2010), Paraíba (Feijó and Langguth 2011), Piauí (Novaes et al. 2013), Amapá (Silva et al. 2013), Roraima (Capaverde-Junior et al. 2014) and Tocantins (Lapenta and Bueno 2015) (Figure 1; Table 1).

Bernard and Fenton (2002) reported *C. planirostris* from the state of Pará. This record is frequently cited by other studies (e.g., Fabián and Gregorin 2007; Tavares et

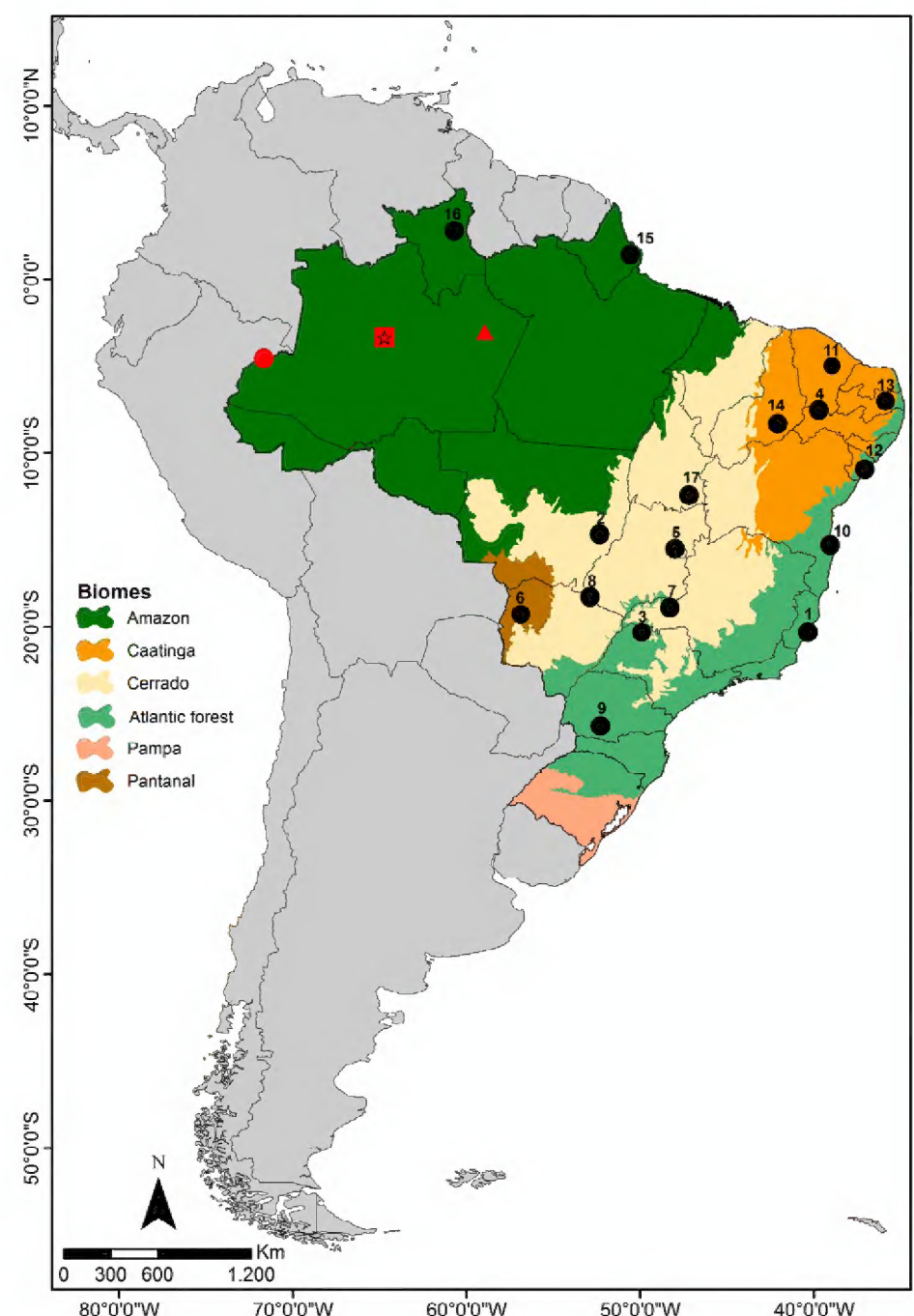


Figure 1. Records of *Cynomops planirostris* in Brazil: circle, square, triangle and red star indicate the records from the state of Amazonas. Black circles indicate other records for Brazil. The numbers and symbol corresponding to the records are indicated in Table 1.

Table 1. Localities of occurrence of *C. planirostris* in Brazil. Asterisks indicate the first record for each state.

Number/ Geometric Symbol	Latitude	Longitude	State	Locality	Author
1	20°17' S	040°21' W	Espírito Santo	Santa Tereza	Ruschi (1951)*
2	14°39' S	052°20' W	Mato Grosso	Xavantina	Pine et al. 1970*
3	22°20' S	049°35' W	São Paulo	São José do Rio Preto	Vizotto and Taddei (1976)*
3	21°02'24" S	049°08'24" W	São Paulo	Ibirá	Vizotto and Taddei (1976)
3	21°09'36" S	049°14'24" W	São Paulo	Irapuã	Vizotto and Taddei (1976)
3	20°24'36" S	050°01'12" W	São Paulo	Nhandeara	Vizotto and Taddei (1976)
3	21°16'48" S	049°07'48" W	São Paulo	Novo Horizonte	Vizotto and Taddei (1976)
3	21°11'60" S	049°17'24" W	São Paulo	Sales	Vizotto and Taddei (1976)
3	21°7'12" S	049°10'12" W	São Paulo	Urupês	Vizotto and Taddei (1976)
4	07°31' S	039°43' W	Pernambuco	Exu	Mares et al. (1981)*
5	15°30'0" S	047°59'24" W	Distrito Federal	Brasília	Sá (1998)*
6	19°16' S	057°00' W	Mato Grosso do Sul	Nhecolândia	Pulchério-Leite et al. (1998)*
6	20°29' S	055°48' W	Mato Grosso do Sul	Aquidauana	Pulchério-Leite et al. (1998)
7	18°53' S	048°17' W	Minas Gerais	Uberlândia	Pedro and Taddei (1998)*
8	18°15'36" S	052°53'24" W	Goiás	Parque Nacional das Emas	Rodrigues et al. (2002)*
9	25°41' S	052°17' W	Paraná	Foz do Rio Jordão	Miretzki (2003)*
10	15°17' S	39°04' W	Bahia	Una	Faria et al. (2006)*
11	03°42'7.902" S	039°47'02.648" W	Ceará	Irauçuba	Fabián (2008)*
11	40°58'12.018" S	039°01'11.140" W	Ceará	Quixadá	Fabián(2008)*
12	10°55' S	37°04' W	Sergipe	Aracaju	Rocha et al. (2010)*
13	07°41' S	035°39' W	Paraíba	Umbuzeiros	Feijó and Langguth (2011)*
13	07°06' S	034°52' W	Paraíba	João Pessoa	Feijó and Langguth (2011)
14	08°18' S	042°05' W	Piauí	São João do Piauí	Novaes et al. (2013)*
15	01°26'16.188" N	050°34'33.244' W	Amapá	REBIO Piratuba	Silva et al. (2013)
16	02°49'04.8" N	060°41'47.62" W	Roraima	Boa Vista	Capaverde-Junior et al. (2014)*
17	12°24'24" S	047°11'08" W	Tocantins	Conceição do Tocantins	Lapenta and Bueno (2015)*
Red square	03°20'41.52" S	064°42'28.41" W	Amazonas	Tefé	Mok and Lacey (1980)*
Star	03°35'02.28" S	64°72'05.43" W	Amazonas	Tefé	This study (IDSM0905)
Red triangle	03°1'55.2" S	058°55'48" W	Amazonas	Itacoatiara	(USNM 260180, 260181)
Red circle	04°31'59.671" S	071°40'01.2" W	Amazonas	Atalaia do Norte (Estirão do Equador)	(MPEG1711, 1712, 1714, 1715, 1720, 1721)

al. 2008; Rocha et al. 2010; Novaes et al. 2013). However, Bernard et al. (2011a) recognized that the record of this species should be removed from the list of recorded species for the state of Pará due to an error in record keeping for that state. There are states with more than one record for *C. planirostris*, but in Figure 1 we show only studies where the species was first recorded; other records for these states are shown in Table 1.

In 1980, Mok and Lacey reported the occurrence of *C. planirostris* in the city of Tefé, state of Amazonas. The voucher specimens (USNM 531145, USNM 556087) are deposited at the Smithsonian Institution National Museum of Natural History in Washington, DC, USA. These records have not been taken into account by subsequent studies (e.g., Eger 2008; Bernard et al. 2011a; Novaes et al. 2013), mainly because the article written by Mok and Lacey (1980) was published in the printed version of the journal *Acta Amazonica* (Portuguese edition), hindering its wider distribution.

Here we report new records of *C. planirostris* for the state of Amazonas through the recent capture of a specimen in the city of Tefé and specimens in the

mammal collections at the Smithsonian Institution National Museum of Natural History (USNM) and the Museu Paraense Emílio Goeldi (MPEG).

The new record in the city of Tefé (03°35'2.28" S, 064°72'05.43" W) presented here was obtained during a bat survey in the urban area in December 2011. The specimen was captured in a forest fragment of fruit trees, close to a pasture area, in a mist net, size 12 × 3 m, set up at ground level. Data collection was conducted with the authorization of the Chico Mendes Institute for Biodiversity Conservation, under the license of the Authorization and Information System on Biodiversity 26,162-1.

The specimen was collected and handled following the procedures described by the American Society of Mammalogists (Sikes et al. 2011). The voucher specimen was preserved in 70% alcohol and deposited in the Mammal Collection of the Mamirauá Institute for Sustainable Development (IDSMo905).

The specimen is an adult male, with a forearm length of 34.13 mm and weight of 13 g (Figure 2). The identification was done following the characteristics provided by



Figure 2. Specimen of *Cynomops planirostris* captured in Tefé, Amazonas. Lateral view (A), ventral view (B) and dorsal view (C). Photos by G.P. Lopes.

Simmons and Voss (1998) and Eger (2008). *Cynomops planirostris* differs from its most similar congener *C. parvus* by its smaller overall size, smaller forearms and tail, and distinct coloration (Simmons and Voss 1998). *Cynomops planirostris* presents an opaque reddish-brown coloration on the dorsum, while the ventral coloration is slightly lighter, with a continuous white patch on the chest and abdomen (Figure 2) (Simmons and Voss 1998; Gregorin and Taddei 2002). *Cynomops parvus* has a darker, homogeneous coloration, and a bright and dark brown-gray color, with the ventral coloration showing the same patterns as the dorsal coloration, but usually greyer (Simmons and Voss 1998; Gregorin and Taddei 2002). Moreover, the collected specimen shows skull characters also compatible with *C. planirostris*, such as weakly developed basisphenoid pits, relatively low and short rostrum, with the anterior face of the lacrimal ridges sloping posteriorly (Eger 2008).

In addition to the records of Mok and Lacey (1980) and the one captured by us, there are other specimens collected in Amazonas state that are deposited at the USNM and MPEG (Table 1). At the USNM, the specimens are a male and a female collected in Itacoatiara ($03^{\circ}1'57.464''$ S, $058^{\circ}55'51.449''$ W) on 2 May 1913, with cleaned skulls and bodies preserved in fluid. At MPEG there are skins and cleaned skulls of five females, collected on March 1961 at the Special Border Platoon of the Brazilian Army Estirão of Ecuador ($03^{\circ}53'17.419''$ S, $071^{\circ}40'03.31''$ W), Municipality of Atalaia do Norte district, at the border with Peru (Table 1).

Our findings confirm the presence of *C. planirostris* in the state of Amazonas, with a second record in the

city of Tefé (Mok and Lacey 1980), and two additional museum records for Atalaia do Norte and Itacoatiara. These records fill another gap for bats in the Brazilian Amazon. This biome is one of the most poorly sampled in Brazil, with heterogeneous and fragmented records and few intensely sampled sites (Lim and Engstrom 2001; Bernard and Fenton 2002; Sampaio et al. 2003; Martins et al. 2011; Bernard et al. 2011a, b). This deficiency creates large gaps in the sampling distribution of many species of bats, which results in lack of refined biogeographical patterns for most of the species (Lim and Engstrom 2001).

This is the third state in the Brazilian Amazon where *C. planirostris* was collected. To date, the Pampa is the only biome in Brazil without any record of this species. This is the first record in 25 years since the work of Mok and Lacey (1980), which confirms the difficulty of catching this species, even in intensely sampled locations (Sampaio et al. 2003). We emphasize that the use of alternative sampling methods for bats, such as harp traps, canopy nets, searching for diurnal roosts and echolocation calls, may contribute to record this and other species that are rarely captured with mist nets set at the ground level (Kunz and Kurta 1988; Simmons and Voss 1998; Kalko and Handley 2001; Pol et al. 2003).

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